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MANITOBA DEPARTMENT OF AGRICULTURE AND IMMIGRATION
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ONE WEEK LOAN
GENERAL SCIENCES

FIELD BINDWEED

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WEEDS COMMISSION

MANITOBA DEPARTMENT OF AGRICULTURE
WINNIPEG, MANITOBA.

By Authority of Hon. D. L. Campbell, Minister of Agriculture and Immigration

FIELD BINDWEED

Other Common Names: Creeping Jenny, Small-flowered Morning-glory, Wild Morning-glory, European Bindweed, Small Bindweed, Corn-bind, Cow-bind, Bell-bind, Green Vine.

Botanical Name: Convolvulus arvensis.

Field Bindweed, is a deep-rooted, introduced Morning-glory—a weed of major importance—that is beginning to appear in some of our Manitoba fields. Because of its decided resemblance in general appearance to Wild Buckwheat, and also because we have always had in Manitoba a native Morning-glory that looks almost exactly like Field Bindweed, there is unusual danger that this intruder shall remain unidentified in many fields until it is well established.

In some of the states just south of us Field Bindweed has spread very seriously, and the situation is alarming. There is every reason to believe that unless quite active steps are taken for its control the rate of spread in Manitoba will be equally aggressive.

DESCRIPTION

GENERAL—Field Bindweed is by no means a striking looking or a dangerous looking plant. From its long, deep, over-wintered roots it begins about the end of May or first of June, to produce from one or two up to perhaps thirty tender, soft, trailing, smooth stems. These lie flat on the ground unless there is some support within reach; if there is support, such as corn stalks or cereal plants, they will wind about them and climb up. Sometimes in wheat fields they will climb almost to the top of the grain. The stems mostly grow from six inches to four feet in length, and when growing among a cereal crop they are almost sure, except when in bloom, to be mistaken for Wild Buckwheat, which in some seasons is quite common.

ROOT SYSTEM—The white, cord-like root-stocks penetrate very deeply into the soils. (Some authorities say 20 feet or more). They are from about the size of shoe laces down. They have the ability to run sideways underground and to send up new plants several feet from the original, this underground spread probably being the principal, though not the sole, method of multiplication. At any part of their length the roots may bear buds and be able to produce new plants. So successful is Field Bindweed in propagation that if undisturbed it will soon smother almost everything else and form a dense mat.

This drawing, reproduced from an Ontario Department of Agriculture publication, by courtesy of that Department, gives a very good idea of the appearance of this weed.

LEAVES AND FLOWERS—The largest leaves are about 1¼ inch long and ¾ inch wide. (To see the shape, observe the illustrations).

In stem and leaf, the writer has never been able to distinguish unfailingly between the native hedge Bindweed, which may be found scattered over the Province, and the imported Field Bindweed. When the plants bloom, however, the following definite points or distinction appear:

1. Field Bindweed flowers are smaller than the native (about 1 inch across compared with 2 inches for the native blooms).

2. Though both run from white to pink, the imported species is mostly pink-flowered and the native white-flowered.

3. The calyx (the green cup that holds the flower) is quite short on the imported plant. In the native, on the other hand, this calyx is characterized by two angular green bracts or leaves which extend up the side of the flower about ¾ inch. These bracts persist after the flower has gone. This is the most distinguishing mark of difference between the two plants.

4. Two scale-like bracts, the size of pinheads, are borne partway along the flower stalk of the imported species, while these are absent from the native.

Field Bindweed flowers are funnel-shaped, delicate, attractive and look like an ordinary Morning-glory flower, but smaller.

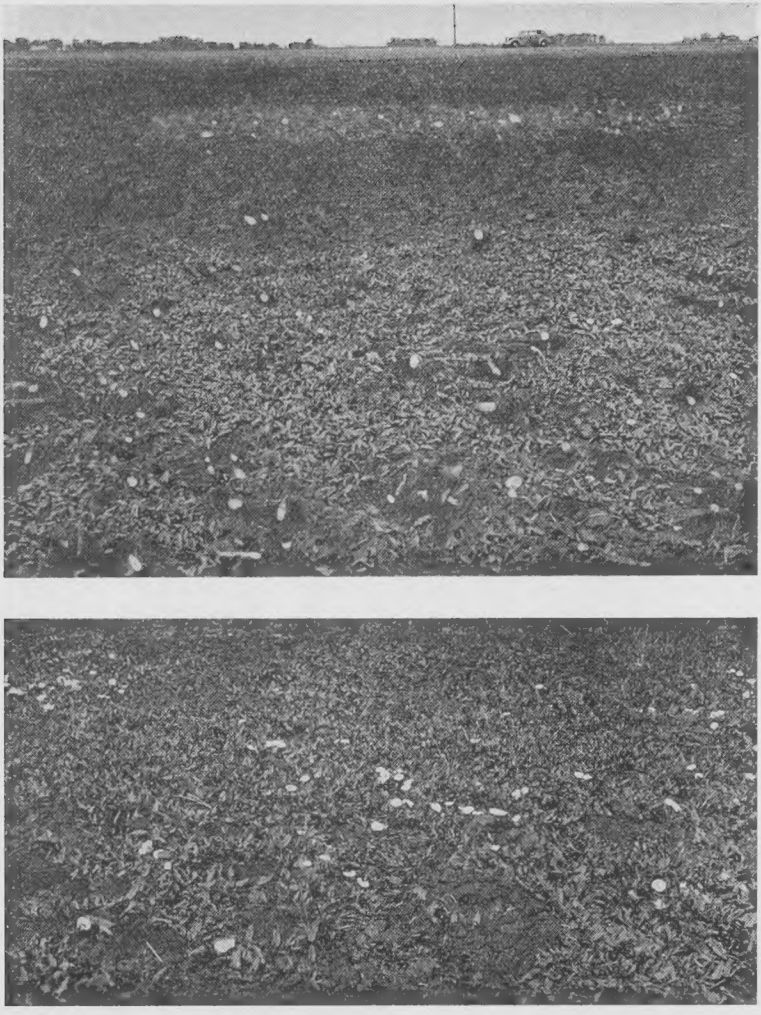
SEEDS—The seeds are borne in papery capsules. These capsules are about the size of small peas and would be globe-shaped but for the fact that on one side they draw to a point where they attach to the plant. Mostly there are four seeds in a capsule, and these are brown, pebbled and as large as flax seeds. Many seeds are ripe by the end of July.

CONTROL

So far experience in handling Field Bindweed is very limited in Manitoba. In the absence of wider experience, the following suggestions are presented:

1. Use chemical to kill all small patches. Either sodium chlorate or Atlacide is recommended; the former is the active herbicidal ingredient in the latter, but pure sodium chlorate carries a very distinct weed is gone. For further information apply to the Weeds Commission.

2. If the summer-fallow treatment is used, be prepared to work for two consecutive years, as ONE YEAR'S TILLAGE WILL NOT



Photograph of Field Bindweed in fields being "summer fallowed" in Southern Manitoba. About three weeks of neglect on the "fallow" sufficed to permit the weed to mat the ground and to enable it to come into bloom. In these "fallows" the weed was actually gaining ground during the summer fallow year.

KILL FIELD BINDWEED. The cultivators must be sharp enough and rigid enough to cut off every plant below the ground surface, and the treatment must be about once every week in the first year; it may be somewhat less frequent in the second. New plants will grow from short scraps of root, and leaves above the ground always mean more root growth below ground.

Any tillage program must be worked out with a view to reducing soil drifting, for light soil continually worked for two years may blow away to the bottom of the furrow. The writer suggests that a technique new to Manitoba may yet be necessary for such fields and may include, say, wind-breaking rows of sunflowers spaced far enough apart to admit intertilling with ordinary duckfoot cultivators, the wind-break rows next year being sown down the centre of the tilled space and the escaping Bindweed plants among the sunflowers of the first year being attacked by the cultivator during the second year. (By removing the sunflower heads, the row of stalks will mostly stand up and afford winter wind protection).

3. Two other crops that probably will come into use will be sweet clover and alfalfa. These are heavy competitors below ground and above, and a crop of sweet clover, removed in midsummer and followed by plowing and cultivation, would be very effective with such a weed.

4. It is claimed that sheep will eat off the leaves and that pigs are fond of the roots and, if permitted to do so, will hunt for and eat them. Pasturing, however, is not a sufficiently heroic or certain method for such a weed as this.

5. Use extreme care with combines and threshers. The use of the combine would be a most effective way to scatter the seeds of such a weed. THOROUGHLY clean the separator, wagons and all threshing outfit between farms. The law requires this.

6. Be sure that all seed is clean.

7. Remember that Field Bindweed seeds will grow after passing through animals; therefore, grind feed grain from infested fields.

8. Thoroughly rot manure on infested farms.

9. As a precaution, in case of doubt, have suspected plants identified. Send samples to the Weeds Commission, Legislative Building, Winnipeg, or the Dominion Botanist, Central Experimental Farm, Ottawa.

FIELD BINDWEED

Perennial. Morning-glory type of bloom. Deep roots. Seed in capsules.

WILD BUCKWHEAT

Annual. Inconspicuous bloom. Shallow roots. Triangular seeds.

WARNING WORDS

From South Dakota State Planning Board: "The most important noxious weed in the state is the Field Bindweed".

From Circular 50, Nebraska College of Agriculture Experiment Station: "Without doubt the most serious and destructive weed in Nebraska. . . . . Every year a large number of newly infested areas are found."

Director, Division of Seed and Weed Control for Wisconsin: "It is the worst weed in the state".

Kansas has a state Bindweed law with a special Bindweed tax. A report of the State Board of Agriculture says: "Of the state's 105 counties, 101 made the special Bindweed tax levies for 1938, as required, and which, in the aggregate, including townships and cities, provide a fund amounting approximately to $725,000 for the year's operations."